In reviewing his Rebuttal Testimony, it is not apparent that this estimate was ever updated.

AT&T's proposed cost of debt does not include any allowance for flotation costs. Since flotation costs are incurred when bonds are issued, it seems reasonable that the issuer should be able to recover those costs.

Proposed: The forward-looking cost of debt for SBC should be 7.6%. This is based upon the February 1997 Moody's Corporate Bond Yield Averages which reports the current bond yield for "Aa" corporate bonds. This measure focuses on long-term bonds which carry a higher interest rate than shorter-term bonds. Since it is likely that SBC would issue bonds of varying maturity, the forward-looking cost of debt would be less than a strictly long-term bond rate. However, the issuer would also incur flotation costs with new issues. The recommend cost of debt of 7.6% does not include an explicit flotation cost but the flotation costs should be offset by the lower debt costs of short-term maturities. Further offsetting the flotation costs is the fact that SBC bonds generally track about 10 basis points lower than other "Aa" utility bonds.

Cost of Equity

SWBT: SWBT uses a cost of equity of **____** in the CAPCOST model. SWBT's cost of capital witness, William C. Avera, uses several different equity measures to arrive at a cost of equity that ranges from a high of 13.35% to a low of 12.54%. Avera uses a combination of the CAPM analysis and a single-stage DCF analysis to arrive at the high number of 13.35%. The low end of the range is calculated by a combination of a CAPM analysis and a two-stage DCF analysis. The two are then averaged to arrive at Avera's recommended cost of capital of 12.95%.

Analysis: Avera's CAPM relied on one Beta value from Value Line as the measure of risk. Value Line makes an adjustment to the traditional calculation of the Beta value to make it closer to one on the belief that, in the long run, all Beta values will approach one. The exact adjustment that Value Line makes is considered proprietary. Focusing only on Value Line's Beta value results in a higher risk premium. It seems more appropriate to consider several Beta values to reduce the risk that one particular value is biased.

Avera's single-stage and two-stage DCF calculations use an expected dividend yield that is the current dividend times the total SBC earnings growth rate. This would assume the growth in dividends is equal to the expected growth in the earnings of the firm. This is not a reasonable assumption. An increase in earnings does not always translate into a growth in dividend. A comparison of SBC's growth in earnings per share

(EPS) to the growth in dividend payments from 1993 to 1996 indicates that EPS has grown an average of 13.5% annually while dividends have increased an average of 4.3% annually. Clearly it is inappropriate to calculate the expected dividend by assuming the current dividend will increase by the expected growth in earnings. Value Line has estimated the expected dividend to be $1.80 while Avera's method estimated it at $1.89.

In addition, Avera uses the SBC stock price from 7/31/96 as the denominator in his DCF analysis. Using the stock price from a single day increases the risk of a biased estimate of equity if that day were an anomaly in the market or in the price of SBC stock. It would be more appropriate to use an average stock price over at least a two week period to reduce any bias caused by a one day blip in the stock market.

AT&T: AT&T's cost of capital witness, Bradford Cornell uses a combination of the CAPM and a three-stage DCF to arrive at AT&T's proposed cost of equity of 11.3%. To reduce estimation errors, Cornell focuses on a sample of 11 local telephone companies, including SBC, to calculate the cost of equity. This is intended to reduce forecasting errors by focusing on several companies and not relying upon a single forecast.

Analysis: The use of a three-stage DCF to measure the cost of equity creates some areas of concern. In theory, the use of a three-stage DCF is appealing. Since the DCF model is based upon the value of future dividends, the use of three growth stages to reflect the future dividend stream would seem to be appropriate. However, accurately reflecting future dividend streams is extremely difficult which is where the use of the three-stage DCF generates concern. Cornell used a widely published five year growth forecast for the first stage. The second stage lasts for 15 years and assumes that the growth rate falls from the higher level of growth achieved in the first five years to the growth rate of the U.S. economy. The third stage begins in the twentieth year and assumes that the firms in the sample will grow at a rate equal to the U.S. economy. There is no empirical evidence to support the growth in the second and third stages in this analysis. Accurately forecasting five years of growth is almost impossible and accurately forecasting twenty years of growth is even more unlikely. Because of the mathematics and averaging involved in a three-stage DCF, the growth in the second and third periods significantly affect the outcome of the analysis. Unfortunately, the growth estimates in the second and third periods are not reliable so the analysis is heavily based upon questionable estimates. Because of this, the use of a three-stage DCF raises accuracy issues and its results should be used with a degree of caution.

Cornell's CAPM analysis also generates some concern. Primarily, the concern centers around his use of the Beta values. Cornell employs an "unleveraging" method for using the Beta value. This method is supposed

to account for differences in capital structures for the different firms in the sample. In his direct testimony, Cornell states that the Betas are unleveraged using standard financial economic formulas. In a review of financial literature, we were not able to find any support for this unleveraging procedure. Because its use tends to reduce the Beta value and the resulting equity estimate, its use generates a great deal of concern.

Proposed: Because of concerns with each parties' equity estimates, we recommend of cost of equity of 12.36%. This estimate is based upon a combination of a single-stage DCF and a CAPM analysis for SBC.

To avoid the methodological concerns associated with a three-stage DCF, we used a single-stage DCF to estimate the cost of equity. This analysis used an expected dividend of $1.80 based upon the January 10, 1997 Value Line Projection. Three different growth estimates were used to reduce any possible bias associated with the use of a single growth forecast. The sources for these estimates were Institutional Brokers Estimate System (IBES), Standard & Poor's, and Zacks Earning Estimates. The stock price for SBC used in the calculation was the average closing price for SBC as reported in the Wall Street Journal over the period of March 17 thru March 28. A two-week average was used to reduce any bias that might be reflected in the closing price of a single day. The result of the single-stage DCF was 13.13%

The CAPM analysis focuses on SBC but uses three different sources for the Beta value to reduce any bias that results from the use of a single estimate. The three sources were Standard & Poor's, IBES, and Value Line. Because the analysis focused only upon one firm, the unleveraging procedure employed by AT&T's witness is unnecessary. His goal of not relying upon a single estimate was achieved by using multiple forecasts for a single firm instead of a single source of forecasts for multiple firms.

The risk-free rate used is the 30 day T-bill rate which is a widely accepted proxy for a risk-free rate. Some analysts use a 30 year Treasury Bond rate as a risk-free rate but we rejected its use because a long term rate includes an inflation premium associated with inflationary risk and therefore does reflect a risk-free rate. The inflationary risk is reflected in the risk premium and does not need to be included twice. The risk premium was calculated by subtracting Arithmetic Mean Annual Return for U.S. Treasury Bills from 1926 - 1996 from the Arithmetic Mean Annual Return for Large Company Stocks for the same time period. The result of the CAPM was a cost of equity estimate of 11.59%

To arrive at the proposed cost of equity, the results of the two measures were averaged. In theory, the two methods should have produced almost identical results. In this case, they did not which raises some initial

concerns. The two methods estimate the cost of equity from two different approaches. The DCF estimate is based upon future growth while a CAPM analysis is based upon relative risk.

The single-stage DCF relied upon a five year growth forecast as the estimate for long-term growth. SBC's average expected annual growth for the next five years is 9.83%. It is very unlikely that SBC will be able to maintain such a high growth rate indefinitely. At some point SBC's growth will decline. Unfortunately, it is almost impossible to accurately estimate when that growth will diminish. If it were possible to accurately estimate the long-run growth of SBC, a multiple-stage DCF analysis would be preferred. Because of the uncertainties associated with a long-term forecast, a single-stage DCF analysis was used. However, because of the high short run growth expectation, the single-stage DCF is likely to overestimate the true cost of equity. Its results should be used with a note of caution or in combination with another methodology.

The CAPM analysis estimates the cost of equity from risk perspective. It relies upon the historical relationship of SBC stock to the market as a whole to calculate the risk premium. Every stock advertisement points out that past performance does not always reflect future performance. The relationship between SBC's stock and the market as a whole may or may not continue to follow the historical pattern. Some analysts argue that the risk associated with SBC has already increased or will increase because of local competition and that the historical relationship between SBC and the market will change as competition develops. If the riskiness of SBC relative to the riskiness of the market increases, the CAPM will generate a cost of equity estimate that is low. Whether the riskiness of SBC relative to the market will increase is not known so this CAPM analysis does not necessarily produce an estimate that is too low.

An average of the two methodologies provides an estimate for the cost of equity for a company that has historically been low-risk but is expected to achieve high-growth for the next five years.

It is important to remember that this estimate of the cost of equity, as well as AT&T's and SWBT's estimates, are for SBC not SWBT. SBC has investments that are more risky and have more growth potential than SWBT. If competition does increase and is effective, the difference between SWBT and SBC will disappear as the risks and returns of the two entities converge. However, at the present time SWBT is a lower risk entity than SBC. The use of SBC to determine the cost of equity for SWBT will likely produce an estimate that is too high. An adjustment to SBC's cost of equity may be appropriate if the Commission wishes to reflect SWBT's current cost of equity or SWBT's cost of equity in the near future. If the Commission wishes to reflect a likely long-term cost of

equity for SWBT, no adjustment is necessary from the 12.36%.

Capital Structure

SWBT: SWBT proposed a debt/equity ratio of 42%/58%. Currently, SWBT's capital structure is **____** debt and **____** equity. SWBT's proposed capital structure reflects two major accounting adjustments that were made to comply with orders from the Financial Accounting Standards Board. These adjustments were recognized by the Commission in SWBT's last rate case proceeding, Case No. TC-93-224 in which the Commission ordered a capital structure of 57.42% equity and 42.58% debt. In addition, Value Line projects a 42%/58% debt to equity ratio for SBC in the future.

AT&T: AT&T also recommends a debt/equity ratio of 42%/58% but arrives at the number by another method. AT&T's proposed capital structure is based upon an average of the capital structure weighted by market value and the capital structure weighted by book value.

Analysis: The capital structure proposed by both SWBT and AT&T are identical and seem to be appropriate.

Cost of Capital Analysis for SBC

Summary of Positions

Cost of Debt	**High**	**Low**	**Average**	**Proposed**
SWBT Position	8.00%	7.50%	7.75%	7.50%
AT&T Position	-	-	7.50%	7.50%
Recommended Cost of Debt	-	-	7.60%	7.60%

Based upon Moody's 2/97 Long-Term Corporate Bond Yield Averages for Aa Rated Bonds

Cost of Equity	**High**	**Low**	**Average**	**Proposed**
SWBT Position	13.35%	12.54%	12.95%	13.00%
AT&T Position	11.32%	11.25%	11.29%	11.30%
Recommended Cost of Equity	13.12%	11.59%	12.36%	12.36%

Capital Structure	**Debt**	**Equity**
SWBT Position	42%	58%
AT&T Position	42%	58%
Recommended Structure	42%	58%

Weighted Average Cost of Capital	**High**	**Low**	**Average**	**Proposed**
SWBT Position	11.10%	10.42%	10.76%	10.69%
AT&T Position	9.72%	9.68%	9.70%	9.70%
Recommended WACC	10.80%	9.91%	10.36%	10.36%

Staff Analysis

DCF Analysis

Expected Dividend	$1.80
Growth Estimates	
Moody's	10.03%
S&P's	10.00%
Zacks	9.47%
Average Growth Rate	9.83%
Stock Price	$54.56

Expected Dividend based upon Jan. 10 ,1997 Value Line Projection
Stock Price based upon average SBC stock price 3/17-3/28

Results based upon the average growth rate 13.13%

CAPM Analysis

30 Day T-Bill Rate	5.24%
Beta's	
S&P Beta	0.6
IBES Beta	0.64
Value Line Beta	0.90
Average Beta	0.71
Risk Premium	
Premium over 30 Day T-Bill Rate	8.90%

Results based upon the average Beta 11.59%

30 Day T-bill rate as of 3/26/97
S&P Beta is from S&P Online, 3/14/97
Value Line Beta is from the 1/10/97 SBC Value Line Report
IBES Beta is from 2/20/97 IBES Utility Sector Annual Company Summary Data
Risk Premium based upon Ibbotson Associates Annual Returns for Large Companies

Average Using Both Methods	12.36%
DCF Weighting	50.00%
CAPM Weighting	50.00%

Depreciation

Staff was given the goal of determining reasonable depreciation rates based upon reasonably expected life and salvage inputs for each asset category for SWBT based upon "economic" and "forward-looking" methodologies. The crux of the depreciation dispute by the parties to this case lies in what "economic" and "forward-looking" mean, as there is no clear-cut definition of either.

Depreciation expense represents the annual charge to recover the utility's investment in capital items required to create an integrated telephone network over its life. The driving factor in determining appropriate depreciation expense in this arbitration case is the definition of "life." The general equation used to derive depreciation rates is:

$$Depreciation\ Rate = \frac{1 - Net\ Salvage\ \%}{Average\ Service\ Life} \qquad \text{Equation 1}$$

Summary of Staff Depreciation Recommendations

With six modifications to SWBT's proposals, Staff concludes that SWBT's proposed depreciation rates and underlying parameters in this docket are reasonable for the purposes of this arbitration proceeding. These revisions are as listed below:

1. SWBT proposes Equal Life Group (ELG) procedures to calculate depreciation rates. Staff's modification is to eliminate ELG completely and recommends vintage group (VG) methods be applied instead.

2. SWBT proposes a Projection Life (P-life) for the Furniture account of 18.4 years. Staff recommends a P-life of 15.0 years.

3. SWBT proposes a P-life for the Digital Circuit account of 5.8 years. Staff recommends a P-life of 7.0 years.

4. SWBT proposes a P-life for the Underground Cable Exchange Metallic account of 8.3 years. Staff recommends a P-life of 15.0 years.

5. SWBT proposes a P-life for the Underground Cable Toll Metallic account of 6.3 years. Staff recommends a P-life of 15.0 years.

6. SWBT proposes net salvage parameters by account based on averages of year-end 1995 data for its entire 5 state operation. Staff recommends using Missouri-specific data for all accounts and updating that information through year-end 1996

for three accounts: Conduit Systems, Underground Cable Exchange Metallic, and Underground Cable Toll Metallic.

Reasons for these Staff modifications and how the recommendations were arrived at are discussed below.

Schedules DMB-1 and DMB-2 delineate proposed depreciation salvage and life parameters, respectively, from SWBT, AT&T, and Staff for setting depreciation rates in this arbitration case.

Historical Depreciation Methods

NARUC defines depreciation as applied to utility plant as:

> The loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and requirements of public authorities. (NARUC, "Public Utility Depreciation Practices", August 1996, p. 13).

The FCC's definition is almost identical to NARUC's, except it applies to telephone plant instead of utility plant and it requires that the causes of depreciation "can be forecast with a reasonable approach to accuracy." "Service value" as used above has the special meaning of original cost of plant less net salvage. Depreciation, then, is an allocation of cost, not of valuation.

The traditional rate-of-return depreciation goal has been to recover the original cost of a company's assets, less net salvage, from the consumers over the estimated useful life of the property as determined by Equation 1 above. Physical deterioration was historically the leading cause of plant retirements. The retirement rate method is the chief analytical method to determine the plant life. It entails analysis of mortality data by actuarial methods. It is a statistical method in which the underlying assumption is that if history does tend to repeat itself, the service life of the new unit will be reflected in the history of the retired units. The purpose is to generalize the attrition of dollars or units representing physical property into curves representing expected trends (i.e., Iowa curves or sometimes Gompertz-Makeham curves). The area calculated under the generalized curve is the average service life of the property in question.

While recovery was not guaranteed, the depreciation professional attempted to design depreciation rates to recover all prudent investments. Where, in hindsight, lives for newer assets and technologies were set too long based on knowledge of prior life histories of earlier investments, depreciation expense was increased through various means to make the utility whole, and that higher expense could, and was, usually passed on to consumers through their tariffed rates. Absent a specific reason for not doing so, the utility thereby

received full recovery of its investment, albeit sometimes delayed with costs passed on to customers who did not receive a direct benefit from the investment. That was the regulated world.

TELRIC Depreciation

"The depreciation rates used in calculating forward-looking economic costs of elements shall be economic depreciation rates." (Appendix B, FCC Part 51 rules, § 51.505 (b)(3)).

"Depreciation is the method of recognizing as an expense the cost of a capital investment. Properly calculated economic depreciation is a periodic reduction in the book value of an asset that makes the book value equal to its economic or market value." (The Interconnection Order, FCC 96-98/95-185, Released August 8, 1996, Footnote 1711).

The Commission must therefore determine reasonable depreciation rates so that SWBT will recover its TELRIC investment on an economic forward-looking basis. Staff believes this is very similar to the goal under rate-of-return. However, on a go-forward basis, non-regulated companies are not as able to pass service costs from prior investments on to its customers. Doing so would likely increase its customer rates so as to make its services unmarketable in a competitive environment. Or, in the alternative, the company could risk angering its shareholders by providing a lower or no return to them. Also, non-regulated entities are more likely to write off non-performing investments (such as aerial wire, troublesome buried cable, analog switches, and some analog carriers) than keep them in service and on the books as is done under rate-of-return.

Staff's goal is to recommend depreciation rates based on parameters that SWBT is likely to experience for financial purposes so as to fully recover its long run capital costs in a timely fashion and be fair to the customers.

TELRIC Distinctions

As previously stated, the key distinction between setting depreciation rates for TELRIC purposes from depreciation rates for rate making under rate-of-return is in the selection of the life parameter of the depreciation rate equation. Economic obsolescence has overtaken physical deterioration as the primary cause of loss of value and retirements. Small changes to the net salvage parameter have little effect on the depreciation rate as compared to changes in the life parameter. Life selection was therefore Staff's predominant focus. The following example illustrates why lives under each of the above scenarios may be different.

Given that in an exchange a buried copper feeder cable with 1200 pairs runs under Main Street to serve the many customers along Main Street and beyond. The LEC must maintain that cable in service until the last customer served by the cable is moved onto a replacement facility many years ahead. Under rate of return regulation, regardless of the number of customers on the 1200 pair cable, the LEC depreciates the cable investment at the same depreciation rate over its life so that the investment is recovered. Recovery is

essentially assured, even if only one customer remains on the cable, because the depreciation expense is built into revenue requirement for the entire customer base, not just rates for those directly using that plant.

In a competitive environment, the utility must also maintain that cable while it provides service. However, it must price its service to the extent possible such that those who receive service pay for the investment required to provide that service. If the cable was expected to remain in service 25 years and only one customer received service over that cable in the last year, that customer can not be expected to be charged for one 25th of the cost of the cable that last year; the company must recover its cost over a shorter period or economic life. The company's depreciation life must be short enough to recover its investment from the pool of customers receiving benefit from that plant, or risk never recovering the investment fully.

A counter position, which Staff does not support, is that it is possible that a plant category, such as buried cable above, will permit increasing cash flows rather than declining cash flows to the utility over time, due to increased use of the network from line growth, second line take, FAX lines, introduction of some cost reducing technology, etc. This suggests that depreciation should be end loaded or depreciation lives lengthened. While network minutes of use have increased over time and certain technologies have been introduced to extend the usefulness of segments of plant, historical plant retirement data does not support the contention that overall economic lives should be longer; indeed, a wealth of available data indicates that lives have become shorter for computers, switching devices of all types, transmission equipment, and all varieties of metallic cable.

Staff Review Methodologies

SWBT provided Staff a list of life and salvage parameters for input into its CAPCOST depreciation model, which calculates levelized depreciation rates the Company believes should be applied to its Missouri operation for TELRIC pricing purposes. Three approaches were used by Staff to test the reasonableness of these depreciation parameters:

1. Comparison by USOA account and company composite to depreciation rates and parameters currently prescribed by the MoPSC and the FCC.

2. Benchmarking against implied depreciation rates calculated via financial information obtained over the Internet and through other sources available to the Commission.

3. Comparison to available information on an individual account basis. This involved both public document searches and HC information obtained as a result of Staff's investigation.

1. MoPSC and FCC Prescribed Parameters and Rates

Schedules DMB-3 and DMB-4 delineate current salvage and life depreciation parameters

for AT&T, SWBT Missouri Intrastate (PSC approved) and SWBT Missouri Interstate (FCC approved), and FCC allowed ranges for setting depreciation rates nationally for company accounts which meet specific criteria.

SWBT existing intrastate depreciation rates became effective January 1, 1996 in Telephone Authority Order 997. Following comprehensive depreciation studies by SWBT, Staff, and the FCC Staff and subsequent 3-way meeting discussions in 1995, this Order was drafted to revise rates for 14 of 34 accounts. All three parties desired changes to the remaining 20 accounts, but because no docket was open to allow each party to argue its positions before the Commission and no settlement could be reached on the parameters or rates for those 20 accounts, current rates at that time were continued. Depreciation rates for those 20 accounts were last decided in Case No. TC-93-224, effective January 1, 1994.

In Staff's opinion, prescribed rates provide little value as a comparison for several reasons. As described under the TELRIC Distinctions subsection, a reasonable assumption is that TELRIC telephone plant will probably not be able to be depreciated over as long a life as embedded plant, therefore, embedded depreciation rates are most likely the lowest expected in any comparison.

The FCC opened a docket in 1993 to consider and adopt methods to streamline its interstate depreciation rate setting procedures. The result is a set of minimum and maximum future net salvage and projection life parameters for 30 plant accounts (of approximately 40 commonly used accounts) shown on Schedules DMB-3 and DMB-4. FCC rules allow a degree of flexibility to use those parameters. As long as company data supports both life and salvage parameters within the range for any of the 30 accounts, the company may elect to use any parameter within the ranges. Once an account meets this range criteria, the LEC no longer need submit detailed analytical data, and may merely file with the FCC for revised parameters with little support. This process began in 1994 and is used by SWBT.

Prior to the FCC's decision in Docket 92-296, the MoPSC filed comments with the FCC that it is opposed to the range concept for accounts which constitute more than two percent of the LEC's total investment, that depreciation parameters should be based in regards to the circumstances of individual LECs, and that the magnitude of the difference between upper and lower bounds would permit a LEC to change its depreciation without justification.

Staff desires to caution the Commission from relying heavily, if at all, on the FCC's ranges to reach its decision in these depreciation matters based upon how parameters underlying those ranges were determined. To derive the ranges, the FCC relied upon simple averages of the then approved parameters by all FCC regulated companies. The ranges were calculated by rounding to within one standard deviation plus and minus from the mean. From experience, Staff is aware that not all, and perhaps many, parameters the FCC used in its averages do not represent true plant mortality experience. Rather, those parameters are many times settled upon at triennial depreciation rate review meetings by the FCC

Staff, PUC Staffs, and company representatives for expediency, sometimes involving compromise, in order to reach mutual agreement.

2. Benchmarking

Staff believes that benchmarking SWBT depreciation rates against those booked for financial purposes of likely competitors and other companies using similar technologies is appropriate and is the best method to determine if SWBT parameters pass the muster of reasonableness.

The key source of public financial information relied upon is the Security and Exchange Commission's (SEC's) EDGAR database of form 10-K financial reports filed annually by all publicly traded firms. Staff chose 19 of the largest CAP, CATV, Cellular, IXC, and PCS companies to benchmark against:

AirTouch
AT&T
Brooks Fiber Properties
Cablevision Systems
Comcast
Continental Cablevision
Cox Cable
Jones Intercable
LCI International
McCaw Cellular ('93 data)
MCI
MFS
Nextel
Sprint
Tele-Communications, Inc.
Teleport Communications Group
Time Warner
US Cellular
360º Communications

Other sources of information are available for these and other companies, but because the source data could not be verified, the depreciation rate information was generally deemed not reliable. These sources included:

- Standard & Poors Utilities Rating Service, which publishes financial statistics quarterly
- Value Line, which publishes a wealth of stock information annually
- Arthur Andersen, Net Results 96 Report on the Communications Industry
- Wisconsin PSC Staff performed an analysis in 1993 identical to Staff for over 300 of the Fortune 500 companies, but did not save the 10-K reports.

After the companies were chosen, Staff conducted an EDGAR database query for the years 1996, 1995, and if necessary, 1994 to locate and print the 10-K reports. Then each report was combed to locate the financial entries for annual depreciation accrual from the Cash Flow Statement and year end gross plant investment from the Balance Sheet. If identifiable, land investment was excluded from the plant amount, as it is not depreciable. For companies with unreported amounts of land investment, the resulting implied depreciation rates are understated by an unknown amount, likely only tenths of a percentage. For the end result, an implied depreciation rate is calculated by dividing the annual accrual by the average annual plant balance.

A calculated implied depreciation rate is the best obtainable value for a company composite depreciation rate. Companies are not required to provide, and no company reviewed did provide, a composite or detailed depreciation rates by account; this is closely held information.

SWBT conducted an identical implied depreciation rate calculation for year-end 1995 only, for nearly the same company pool as Staff. Therefore, after verifying the accuracy of about half of the 1995 data from SWBT, Staff used SWBT's supplied information for the remainder of the 19 companies.

At this point, Staff had a table of implied depreciation rates for the 19 companies in the benchmark group for 1995 and for 9 of the 19 companies for 1996. Schedule DMB-5 is a complete summary of the benchmark results.

Next, a composite SWBT rate was developed. Assuming that the telephone network in a TELRIC environment as compared to today would require a similar magnitude of investments in switching, circuit equipment, cable, and other items to function, Staff used SWBT's 1995 year end plant investments from MR6 reports filed with Staff and SWBT's proposed depreciation rates by account to calculate a company composite depreciation rate of 10.6%. This rate is what was compared to the other company benchmarks.

To more accurately reflect reality, the above rate should have been calculated using the 1995 plant *average* balances rather than year-end, however, Staff encountered difficulty obtaining and then using the 1994 report needed to obtain beginning of year 1995 balances. This difference is estimated to make the calculated rate 0.2 to 0.4 % lower than had that data been available.

The Wisconsin PSC Staff calculated an average implied depreciation rate of 8.7% for 367 companies of the Fortune 500 in a similar endeavor based on 1993 financial reports. This was without regard for the type of industry or size of company and represents a simple average.

Few of the 28 implied rates calculated by Staff were lower than SWBT's 10.6%. It is significant to note that with the exception of US Cellular, all IXC and only IXC implied rates were less than SWBT's. If one expects SWBT rates to be in line with IXCs as a group, the observer could make the determination that, yes, SWBT rates are close, but fall on the high end of that group.

Per AT&T, the large change in implied depreciation rates from 1995 to 1996 (10.5 to 7.6%) is distorted by the spinoff in 1996 of Lucent Technologies and NCR from AT&T. AT&T provided data directly to Staff which indicates higher composite depreciation rates for 1996 of 11.0% and for 1995 of 11.3%.

Aside from the few rates lower than SWBT's mentioned above, the remaining results were scattered throughout the teens, with a few higher figures. The 1995 average implied rate is 16.0 % and the median 13.8%. The range of implied rates is puzzling and begs the

reviewer to search for an answer. Unfortunately, no actual explanation is available other than to state that for the most part, each company chooses its own depreciation rates for the particular type of assets in the particular market and industry it is in. There is no requirement to report details of how depreciation is calculated. Other than IXCs, no particular type of company had unusually high or low rates compared to the others in the group of 19 companies.

The major drawback to relying on benchmark results is that implied rates are wholly dependent on a particular company's investment in certain assets and those details are not disclosed. That is, a cellular company most likely has the majority of its investment in circuit equipment with relatively short lives and high depreciation rates and little in cable with relatively long lives and low rates, so it is expected that a cellular company will have generally higher depreciation rates than a cable intensive LEC or IXC.

Similar rationale applies to benchmarking IXC and CAP rates to a LEC. For example, Staff does not know the difference in mix of plant investment for these entities, the expected average life of LEC Class 5 switches versus an IXC's Class 4 switches, nor the reasons for or actual rates applied to each asset type.

While the implied rates indicate a large range, SWBT TELRIC depreciation rate parameter proposals put SWBT sixth from the lowest in the pool of 19 benchmarked companies. Staff's modifications reduce SWBT's composite rate even further, into or below those implied rates for the IXC group. This is the most significant contributing factor to Staff's belief that SWBT's proposed depreciation parameters as modified by Staff are reasonable.

3. Comparison to Individual Account Information Available

In this proceeding, depreciation rates should be more closely scrutinized in the areas of switching, transmission, and cable because those are the areas where the vast majority of capital dollars are spent. As stated previously, applied depreciation rates by account is generally closely held company information and not available for comparison purposes. However, some sources for this information remain available.

AT&T provided this data on an HC basis. How AT&T's IXC investments relate specifically to SWBT's LEC investments is only partially understood. While AT&T has stated it sees no reason for a correlation between its life used for fiber and that a LEC will experience, Staff expects similar performance from fiber optic cable. AT&T uses a **__** year life on fiber optic cable. SWBT proposes 13.7 years for aerial, 25.7 years for most underground, and 20.4 years for most direct buried fiber cable.

Knowing that AT&T uses little copper cable and a LEC in the near term will invest heavily in that media, AT&T uses ** _ ** years for its direct buried account. The 10-K reports provided a small amount of additional insight for some companies in the benchmark group in their Notes to Financial Statements section: for cable accounts, Sprint reports a life of 15 to 20 years, Cablevision 10 to 15 years, and Jones 15 years. SWBT proposes 13.7 for

aerial, 8.3 years for most underground, and 16.3 years for most buried cable (as SWBT's largest investment category, the buried metallic cable account represents 22% of its depreciable plant investment). **Staff discusses its adjustment for the underground copper account later in this section.**

For digital switching, AT&T uses **____** years. In 10-K Financial Notes Sprint reports a life of 11-12 years and AirTouch 10 years. SWBT proposes 9.4 years (account represents 10% of SWBT's depreciable plant investment). The numbers compare favorably. While the detailed use and type of switching gear of all these companies is unknown, the conclusion can be drawn from the evidence that SWBT's proposals are reasonable, albeit on the low side, in this area.

For digital circuit equipment, AT&T uses **___** years. 10-K Financial Notes indicate Sprint uses 7-11 years, AirTouch 10 years, and Cablevision 6-10 years. SWBT proposes 5.8 years (account represents 14% of SWBT's depreciable plant investment). **Staff discusses its adjustment for the digital circuit account later in this section.**

Does new technology mean lives should be shorter than the replaced technology? Not necessarily. However, one must take the perspective of an investor creating a network from scratch today. Staff does not believe anyone making those substantial investments today would expect to merely sell dial tone and voice services over that network. And Staff does not believe it was the intention of the FCC to have this state's Commission set prices on such a network. Far more, the network we are pricing is quite complex, robust, and flexible, capable of providing not only voice and the many related services, but also transmitting data over copper voice grade DS-0 circuits and at faster DS-1 speed, and over fiber optic facilities at DS-3 and higher bandwidths.

Staff desires to bring to the Commission's attention Order FCC 97-163 released May 8, 1997 regarding implementation of Section 254(k) of the Communications Act of 1934 as Amended which addresses specifically prohibiting telecommunications carriers from subsidizing competitive service with services that are not. AT&T has discussed with Staff that TELRIC rates should not be set to recover any LEC investment for future service offerings, such as CATV or other high bandwidth investments. No attempt has been made to do so by Staff. To the extent any provider's network is built with fiber optic facilities on poles and in underground conduit and manhole systems, extra capacity is most likely available for provision of future services, be they competitive or not. Any entity building a communication network today would be foolish not to build in extra capacity for system growth and flexibility. It would be an impossible task, however, to determine what of SWBT's investment was built for strictly competitive purposes.

AT&T's Depreciation Position

AT&T's salvage and life proposals are as indicated on Schedules DMB-1 and DMB-2. Upon inspection, the Commission will notice these parameters were selected by AT&T as identical to the FCC's currently allowed parameter ranges on Schedules DMB-3 and DMB-4.

AT&T's position is that depreciation inputs to the Hatfield model should be based upon salvage and life values falling within the ranges currently allowed by the FCC. AT&T argues that these ranges are based upon national averages for embedded plant and are therefore representative for TELRIC purposes. To counter SWBT's claims requiring generally shorter lives for TELRIC than those for the embedded network, AT&T visions no replacement technology for the existing digital switch network nor any reason that the existing copper cable based network can not continue to provide service for another 20 to 30 years.

SWBT's Depreciation Position

For cable and other outside plant accounts, SWBT's proposals are based upon its subject matter experts' (SMEs') ability to forecast retirement patterns of its embedded network over time. SMEs make life cycle estimates based upon the usefulness and usability of its plant. Then, based on these economic life cycle estimates, an economic remaining life is calculated.

Using the economic remaining life and known historical mortality patterns from earlier depreciation analyses in a depreciation model known as the generation arrangement, a projection life (P-life) for each account is determined. This is the input to SWBT's CAPCOST model.

SWBT uses very similar methods to derive P-lives for other account types. For circuit accounts, the inputs for remaining life come from the Network Department. And for the digital switch account, SWBT relies upon the FCC's 20 year lifespan method to derive an economic remaining life, but uses the company specific historical interim retirement rate of 3.2% rather than 2% as required by the FCC in prior studies.

Comparison of the parties' positions

AT&T relies wholly upon depreciation parameters set for embedded plant, based upon national averages and whatever nuances are built into how those parameters were originally derived or settled upon.

SWBT goes through a barrage of tedious mathematical calculations using inputs from prior studies and SWBT experts' opinions about the future of Company plant investments to derive its life inputs.

Staff has found certain faults in SWBT's methodologies in the past which remain today. However, in Staff's opinion, those faults are not so serious as to cause Staff to ignore the results. On the contrary, with relatively few exceptions, Staff has accepted SWBT's inputs as reasonable for the purpose of this arbitration. Given the original direction to determine if SWBT's inputs are reasonable, Staff believes after its review of the available information that those inputs are reasonable if modified as recommended.

AT&T has provided Staff several documents with claims to support its depreciation

inputs. Staff discussed some documents with AT&T's Mr. Flappan and Mr. Richard Lee of Snavely King Majoros O'Connor & Lee, serving as a consultant to AT&T. Mr. Lee supports the FCC's plant lives because "since its Staff has the responsibility and the opportunity to review periodically the plans of every large telephone company, I consider them to be the most knowledgeable individuals on this subject in the Nation" and "the FCC directed its staff ... to pay closer attention to company plans, technological developments and other future oriented analyses."

Larry Vanston, of Technology Futures, Inc. (TFI) opines that lives of regulated telephone plant are much too long and performs substitution analyses to calculate how short lives of embedded plant should be. SWBT opinions parallel those of TFI, its consultant through a telecommunications group comprised primarily of RBOCs and GTE. Mr. Lee criticizes Mr. Vanston's opinions.

While Staff's view of lives for telephone plant are not as aggressive as TFI's projections, Staff is concerned that AT&T does not consider forces of retirement in a fashion such as SWBT or TFI. For example, as discussed in the TELRIC Distinctions subsection, although there is no technology in immediate sight which will economically replace copper distribution cable, one need not wait for that day to occur to prepare by writing down the investment through depreciation. Similarly, there is no replacement for digital switching technology (Mr. Lee points out that Bell Labs has closed the doors to its photonic switching research area in Mount Laurel, NJ), but if one waits for that day when a replacement is economically efficient, then a situation like that of unrecovered analog switching gear when digital came along will recur.

Mr. Lee has provided Staff testimony wherein he argues that because LECs have many times more switches than AT&T's 150, that the LECs can not replace them as often and therefore LEC switch lives must be longer than AT&Ts. He goes on "... regardless of what you want to change, it's not physically possible to convert everything very quickly in a local network, versus a long distance network. So the lives bear no resemblance whatsoever to each other, as far as what the future will be or what the past has been." These statements may or may not be true. This is an unsubstantiated argument provided without support or consideration of all the variables and pertinent facts.

Staff's Modifications to SWBT's Proposed Depreciation Parameters

Modification 1.

SWBT uses Equal Life Group (ELG) procedures to calculate its proposed P-lives. The Staff modification is to reject the use of ELG for TELRIC purposes and use Vintage Group (VG) procedures in its place.

The Commission approved use of ELG in Missouri for telephone companies in Case No. TO-82-3. Only SWBT, GTE, and Sprint use ELG in Missouri.

ELG is an ideally appealing depreciation method because it attempts to depreciate assets over their group expected life. For illustration, use the pole account. Poles will last

different numbers of years. Some will live to the age of 60 or more years. Some will be replaced because they are in the way of road construction, regardless of age. Yet others will be struck by lightning or an unfortunate motorist to meet their fate. ELG assumes a particular retirement pattern and calculates a depreciation rate such that the number of poles that live only one year are recovered in that year, those which live two years are recovered in two years, etc. In this ideal situation, as plant ages over time, the depreciation rate should reduce for the longer living survivors because the short lived plant has been recovered and removed from service. Therefore, customers receiving service from older plant should be paying less for service than those who received service from younger aged plant.

In practice, this reduction in depreciation rates being passed on to customers has not been the case. ELG rates are calculated for a plant account at an instant in time. In practice, composite depreciation rates are used, level from one year to the next, until such time that depreciation and customer rates are reevaluated. Customers do not receive the theoretical benefit of ELG's perfect depreciation stream.

A review of SWBT's CAPCOST model indicates the same treatment as above. CAPCOST models depreciation bookings on an ELG basis, decelerating that expense over time. But the model then levelizes that expense at the cost of money discount rate to calculate levelized system costs. ELG is thereby defeated.

Staff therefore modified SWBT's proposal so depreciation rates are calculated using VG methods instead of ELG. While VG is not as ideal a depreciation method as ELG, the calculation of depreciation using VG and in practice is a closer match. This modification reduces the overall depreciation rate by less than 0.2 percent.

Modification 2.

For the Furniture account, SWBT proposes a P-life of 18.4 years. Staff revised that to 15.0 years based on published figures from other companies.

Modification 3.

For the Digital Circuit account, SWBT proposes a P-life of 5.8 years. Staff considers its revision conservative at 7.0 years. 7 is at the low end of the 6 to 11 years for benchmarked companies. AT&T books depreciation for this account using a P-life of 7.2 years for equipment which is most likely similar to SWBT's digital circuit gear. SWBT should have excluded from its calculations most embedded T-carrier equipment (15% of 1994 investment) which it states is obsolete or in the decline phase.

Modifications 4 and 5.

For the Underground Metallic Exchange and Toll accounts, SWBT proposes P-lives of 8.3 and 6.3 respectively. Staff's modification is a revision to 15.0 years, at the low end of comparative companies. Benchmarked companies report a range of 15 to 20 years. SWBT stated to Staff and OPC that proposed lives appear and are probably too short in this area. In Staff's opinion, the 6.3 and 8.3 years proposed are very unreasonable for this critical plant investment.

Modification 6.

SWBT proposed Future Net Salvage values for all accounts based on SWBT company averages for all 5 operating states. Staff's modification is to use Missouri specific salvage parameters. Additionally, for the Underground Metallic Cable accounts and the Conduit account, sufficient data updated through year end 1996 was provided to Staff to warrant updating salvage parameters for those particular accounts.

Proposed Depreciation Parameters
Future Net Salvage (FNS)

ACCOUNT	DESCRIPTION	SWBT	AT&T *		Staff
			Low	High	
2112	MOTOR VEHICLES	9	10	20	10
2115	GARAGE WORK EQUIPMENT	-141	0	10	5
2116	OTHER WORK EQUIPMENT	4	0	10	2
2121	BUILDINGS	4	N/A	N/A	4
2122	FURNITURE	5	0	10	7
2123.1	OFFICE SUPPORT	1	0	10	0
2123.2	CO COMMUNICATION EQPT	2	-5	10	5
2124	GENERAL PURPOSE COMPUTERS	5	0	5	5
2212	DIGITAL ESS	4	0	5	4
2220	OPERATOR SYSTEMS	1	0	5	3
2231	DIGITAL RADIO SYSTEMS	1	N/A	N/A	3
2232.11	CIRCUIT-DDS	0	0	5	0
2232.12	CIRCUIT-DIGITAL	0	0	5	0
2232.21/22	CIRCUIT ANALOG	-4	N/A	N/A	-4
2311	STATION APPARATUS	-2	N/A	N/A	-2
2341	LARGE PBX	-2	N/A	N/A	-2
2351	PUBLIC TELEPHONE	2	0	10	3
2362	OTHER TERMINAL EQUIPMENT	-1	N/A	N/A	1
2411	POLES	-134	-75	-50	-120
2421	AERIAL CABLE - METALLIC	-42	-35	-10	-46
2421	AERIAL CABLE - FIBER	-42	-25	-10	-46
2422.11	U/G CABLE EXCH METALLIC	-20	-30	-5	-17
2422.12	U/G CABLE TOLL METALLIC	-12	-30	-5	-17
2422.21	U/G CABLE EXCH FIBER	-6	-20	-5	-5
2422.22	U/G CABLE TOLL FIBER	-7	-20	-5	-8
2423.11	BURIED CABLE EXCH METALLIC	-20	-10	0	-15
2423.12	BURIED CABLE TOLL METALLIC	-2	-10	0	-15
2423.21	BURIED CABLE EXCH FIBER	-5	-10	0	-5
2423.22	BURIED CABLE TOLL FIBER	-5	-10	0	-5
2424	SUBMARINE CABLE - METALLIC	-2	N/A	N/A	-2
2424	SUBMARINE CABLE - FIBER	-2	N/A	N/A	-2
2426	INTRABUILDING CABLE - METALLIC	-17	-30	-5	-17
2426	INTRABUILDING CABLE - FIBER	-17	-15	0	-17
2441	CONDUIT SYSTEMS	-6	-10	0	-25

Note:
AT&T believes the salvage parameter should fall within the FCC's allowed range indicated to calculate its adjusted Projection Life for input into the Hatfield model.

Schedule DMB-1

Proposed Depreciation Parameters
Projection Life (P-life)

ACCOUNT	DESCRIPTION	SWBT	AT&T *		Staff
			Low	High	
2112	MOTOR VEHICLES	9.5	7.5	9.5	9.5
2115	GARAGE WORK EQUIPMENT	10.8	12	18	10.8
2116	OTHER WORK EQUIPMENT	15.2	12	18	15.2
2121	BUILDINGS	38.0	N/A	N/A	38.0
2122	FURNITURE	18.4	15	20	15.0
2123.1	OFFICE SUPPORT	11.0	10	15	11.0
2123.2	CO COMMUNICATION EQPT	7.9	7	10	7.9
2124	GENERAL PURPOSE COMPUTERS	6.9	6	8	6.9
2212	DIGITAL ESS	9.4	16	18	9.4
2220	OPERATOR SYSTEMS	13.6	8	12	13.6
2231	DIGITAL RADIO SYSTEMS	12.8	N/A	N/A	12.8
2232.11	CIRCUIT-DDS	9.7	11	13	9.7
2232.12	CIRCUIT-DIGITAL	5.8	11	13	7.0
2232.21/22	CIRCUIT ANALOG	7.0	N/A	N/A	7.0
2311	STATION APPARATUS	7.1	N/A	N/A	7.1
2341	LARGE PBX	8.3	N/A	N/A	8.3
2351	PUBLIC TELEPHONE	7.8	7	10	7.8
2362	OTHER TERMINAL EQUIPMENT	7.2	N/A	N/A	7.2
2411	POLES	18.4	25	35	18.4
2421	AERIAL CABLE - METALLIC	13.7	20	26	13.7
2421	AERIAL CABLE - FIBER	13.7	25	30	13.7
2422.11	U/G CABLE EXCH METALLIC	8.3	25	30	15.0
2422.12	U/G CABLE TOLL METALLIC	6.3	25	30	15.0
2422.21	U/G CABLE EXCH FIBER	25.7	25	30	25.7
2422.22	U/G CABLE TOLL FIBER	20.1	25	30	20.1
2423.11	BURIED CABLE EXCH METALLIC	16.3	20	26	16.3
2423.12	BURIED CABLE TOLL METALLIC	15.1	20	26	15.1
2423.21	BURIED CABLE EXCH FIBER	20.4	25	30	20.4
2423.22	BURIED CABLE TOLL FIBER	19.2	25	30	19.2
2424	SUBMARINE CABLE - METALLIC	24.6	N/A	N/A	24.6
2424	SUBMARINE CABLE - FIBER	24.6	N/A	N/A	24.6
2426	INTRABUILDING CABLE - METALLIC	19.3	20	25	19.3
2426	INTRABUILDING CABLE - FIBER	19.3	25	30	19.3
2441	CONDUIT SYSTEMS	52.0	50	60	52.0

Note:
AT&T believes the life parameter should fall within the FCC's allowed range indicated to calculate its adjusted Projection Life for input into the Hatfield model.

Schedule DMB-2

Current Depreciation Parameters
Future Net Salvage (FNS)

ACCOUNT	DESCRIPTION	Intrastate SWBT	Interstate SWBT	AT&T	FCC Range Low	FCC Range High
2112	MOTOR VEHICLES	10	10	14	10	20
2115	GARAGE WORK EQUIPMENT	5	5	N/A	0	10
2116	OTHER WORK EQUIPMENT	3	3	0	0	10
2121	BUILDINGS	4	4	0	N/A	N/A
2122	FURNITURE	7	7	0	0	10
2123.1	OFFICE SUPPORT	0	0	0	0	10
2123.2	CO COMMUNICATION EQPT	11	11	0	-5	10
2124	GENERAL PURPOSE COMPUTERS	5	5	0	0	5
2212	DIGITAL ESS	10	4	0	0	5
2220	OPERATOR SYSTEMS	3	3	1	0	5
2231	DIGITAL RADIO SYSTEMS	10	-5	-5	N/A	N/A
2232.11	CIRCUIT-DDS	0	0	N/A	0	5
2232.12	CIRCUIT-DIGITAL	1	0	-8	0	5
2232.21/22	CIRCUIT ANALOG	-3	-3	-8	N/A	N/A
2311	STATION APPARATUS	-2	-2	N/A	N/A	N/A
2341	LARGE PBX	6	-2	N/A	N/A	N/A
2351	PUBLIC TELEPHONE	15	15	0	0	10
2362	OTHER TERMINAL EQUIPMENT	1	1	-2	N/A	N/A
2411	POLES	-100	-120	-22	-75	-50
2421	AERIAL CABLE - METALLIC	-29.8	-46	-20	-35	-10
2421	AERIAL CABLE - FIBER	-29.8	-15	0	-25	-10
2422.11	U/G CABLE EXCH METALLIC	-25	-9	N/A	-30	-5
2422.12	U/G CABLE TOLL METALLIC	6	-9	-7	-30	-5
2422.21	U/G CABLE EXCH FIBER	-5	-9	N/A	-20	-5
2422.22	U/G CABLE TOLL FIBER	-8	-9	-4	-20	-5
2423.11	BURIED CABLE EXCH METALLIC	-10	-10	N/A	-10	0
2423.12	BURIED CABLE TOLL METALLIC	-1	-10	-6	-10	0
2423.21	BURIED CABLE EXCH FIBER	-5	-5	N/A	-10	0
2423.22	BURIED CABLE TOLL FIBER	-5	-5	-4	-10	0
2424	SUBMARINE CABLE - METALLIC	1	2	-2	N/A	N/A
2424	SUBMARINE CABLE - FIBER	1	2	-2	N/A	N/A
2426	INTRABUILDING CABLE - METALLIC	-17	-17	N/A	-30	-5
2426	INTRABUILDING CABLE - FIBER	-17	-5	N/A	-15	0
2441	CONDUIT SYSTEMS	-6	-6	-8	-10	0

Schedule DMB-3

Current Depreciation Parameters
Projection Life (P-life)

ACCOUNT	DESCRIPTION	Intrastate SWBT	Interstate SWBT	AT&T	FCC Range Low	FCC Range High
2112	MOTOR VEHICLES	9.3	8.0	6.6	7.5	9.5
2115	GARAGE WORK EQUIPMENT	14.0	12.0	N/A	12	18
2116	OTHER WORK EQUIPMENT	17.0	16.0	8.2	12	18
2121	BUILDINGS	47.0	47.0	40	N/A	N/A
2122	FURNITURE	23.0	18.0	5.6	15	20
2123.1	OFFICE SUPPORT	15.0	11.0	9.3	10	15
2123.2	CO COMMUNICATION EQPT	9.0	9.0	4.7	7	10
2124	GENERAL PURPOSE COMPUTERS	6.8	6.5	5.8	6	8
2212	DIGITAL ESS	17.5	16.0	9.7	16	18
2220	OPERATOR SYSTEMS	15.0	15.0	8.1	8	12
2231	DIGITAL RADIO SYSTEMS	14.5	11.0	9.5	N/A	N/A
2232.11	CIRCUIT-DDS	7.0	7.0	N/A	11	13
2232.12	CIRCUIT-DIGITAL	15.0	11.0	7.2	11	13
2232.21/22	CIRCUIT ANALOG	11.5	11.5	2.5	N/A	N/A
2311	STATION APPARATUS	6.9	6.9	N/A	N/A	N/A
2341	LARGE PBX	9.0	7.0	N/A	N/A	N/A
2351	PUBLIC TELEPHONE	13.0	13.0	7.1	7	10
2362	OTHER TERMINAL EQUIPMENT	7.0	7.0	10.5	N/A	N/A
2411	POLES	36.0	35.0	9.3	25	35
2421	AERIAL CABLE - METALLIC	27.8	25.0	3.4	20	26
2421	AERIAL CABLE - FIBER	27.8	25.0	20	25	30
2422.11	U/G CABLE EXCH METALLIC	30.0	25.0	N/A	25	30
2422.12	U/G CABLE TOLL METALLIC	11.5	25.0	9	25	30
2422.21	U/G CABLE EXCH FIBER	35.0	25.0	N/A	25	30
2422.22	U/G CABLE TOLL FIBER	30.0	25.0	20	25	30
2423.11	BURIED CABLE EXCH METALLIC	28.0	20.0	N/A	20	26
2423.12	BURIED CABLE TOLL METALLIC	12.5	20.0	15	20	26
2423.21	BURIED CABLE EXCH FIBER	30.0	25.0	N/A	25	30
2423.22	BURIED CABLE TOLL FIBER	30.0	25.0	20	25	30
2424	SUBMARINE CABLE - METALLIC	22.0	22.0	24.5	N/A	N/A
2424	SUBMARINE CABLE - FIBER	22.0	22.0	20	N/A	N/A
2426	INTRABUILDING CABLE - METALLIC	30.0	20.0	N/A	20	25
2426	INTRABUILDING CABLE - FIBER	30.0	25.0	N/A	25	30
2441	CONDUIT SYSTEMS	65.0	65.0	54.5	50	60

Schedule DMB-4

Implied Depreciation Rate Calculations
For Arbitration Case Nos. TO-97-40 & TO-96-63

Companies	Predominant Industry Type	31 Dec 96 Investment ($1,000)	31 Dec 95 Investment ($1,000)	31 Dec 94 Investment ($1,000)	Avg. 96 Investment ($1,000)	Avg. 95 Investment ($1,000)	1996 Depr & Amort ($1,000)	1995 Depr & Amort ($1,000)	Implied 1996 Rate	Implied 1995 Rate
Brooks Fiber Properties Inc.	CAP		80,042	20,720	50,042	35,381		4,118		11.6%
MFS Communications Co. Inc.	CAP	1,892,523	1,315,952	787,453	1,604,238	1,051,703	286,131	142,496	17.8%	13.5%
Teleport Communications Group Inc.	CAP		545,653	0	545,653	272,827		37,837		13.9%
Cablevision Systems Corp.	CATV	2,423,539	1,860,752	1,549,302	2,142,146	1,705,027	388,982	319,929	18.2%	18.8%
Comcast	CATV	3,600,100	2,575,633	2,081,256	3,087,867	2,328,445	698,300	689,052	22.6%	29.6%
Continental Cablevision Inc.	CATV		2,107,473	1,353,789	2,107,473	1,730,631		341,171		19.7%
Cox Cable Communications Inc. (Note 2)	CATV	2,316,374	1,213,857	664,265	2,188,401	939,061	264,188	198,788	12.1%	21.2%
Jones Intercable Inc.	CATV	569,148	475,436	333,666	522,292	404,551	131,186	55,805	25.1%	13.8%
Tele-Communications Inc.	CATV	11,619,000	10,974,000	8,851,000	11,296,500	9,912,500	1,616,000	1,372,000	14.3%	13.8%
Time Warner Inc.	CATV		1,988,000	1,410,000	1,988,000	1,699,000		559,000		32.9%
360 Communications	Cellular		1,151,157	836,387	1,151,157	993,772		114,731		11.5%
AirTouch (Note 3)	Cellular	2,321,500	1,320,200	1,560,700	1,820,850	1,440,450	351,300	215,800	19.3%	15.0%
McCaw Cellular ('93 data)	Cellular		1,616,480	1,439,058	1,616,480	1,527,769		226,239		14.7%
U S Cellular	Cellular		674,450	464,132	674,450	569,291		57,302		10.1%
AT&T Corp. (Note 1)	IXC	39,522,000	48,291,000	44,037,000	36,219,500	46,164,000	2,740,000	4,845,000	7.6%	10.5%
LCI International, Inc.	IXC		448,100	373,657	448,100	410,829		43,955		10.7%
MCI Communications	IXC	NA on 10-K	14,243,000	12,218,000	7,121,500	13,230,500	NA on 10-K	1,308,000	NA on 10-K	9.9%
Sprint Corp. (LD only)	IXC	7,390,800	6,773,700	6,056,300	7,082,250	6,415,000	633,300	581,600	8.9%	9.1%
Nextel	PCS		1,192,204	757,855	1,192,204	975,030		236,178		24.2%
								Average	14.6%	16.0%
								Median	17.8%	13.8%

Notes:
General Note: These 10-K provided sufficient data to exclude land from plant: AT&T, Cablevision, Cox, TCI

Shaded entries are SWBT provided data from its 10-K analysis

1. AT&T 1996 10-K restated plant and depreciation due to spinoff of Lucent & NCR. Adjusted data reported in 1996 10-K was used to derive depr rate for 1996.
2. Cox 1996 10-K restated plant and depreciation due to purchase of Times Mirror. Adjusted data reported in 1996 10-K was used to derive depr rate for 1996.
3. Airtouch 10-K plant is not gross, it is net plant, so implied rates are overstated.

Income Tax

Income tax is a variable that impacts all of the unbundled elements of SWBT's telephone network. Income tax is an input into the CAPCOST model, which determines the capital costs associated with unbundled network elements. It is included as a capital cost because SWBT needs to generate enough return on equity to cover income taxes. The issue is whether SWBT should recover the statutory rate or effective income tax rate with or without income tax credit (ITC) amortization. The arbitration staff believe SWBT should use an effective income tax rate without ITC amortization of 38.36 percent.

To account for all income taxes paid, both state (SIT) and federal income tax (FIT) are included in calculating an effective income tax rate. Through deducting FIT for SIT, statutory effective rates may be calculated. ITC amortization may be included in the calculation, however the result is a non-forward looking income tax rate. Since 1991, SWBT has paid the following amounts of income in taxes:

SWBT Income Tax Rates

	1995	1994	1993	1992	1991
FIT Statutory Rate	35.00	35.00	35.00	35.00	35.00
MO Statutory Rate	6.25	6.25	5.00	5.00	6.5
Total Statutory Rate	41.25	41.25	40.00	39.00	40.50
FIT Deductible for SIT	50.00	50.00	100.00	100.00	100.00
FIT Stat. Effective Rate	** **	** **	** **	** **	** **
MO Stat. Effective Rate	** **	** **	** **	** **	** **
Total Stat. Effective Rate	** **	** **	** **	** **	** **
FIT&SIT Effective Rate with ITC Amortization	** **	** **	** **	** **	** **
FIT&SIT Effective Rate without ITC Amortization	** **	** **	** **	** **	** **